

# LISTing Newsletter

Newsletter of the Long Island Sinclair/Timex Users Group  
(Incorporating N.Y.T.S.E.)

Issue

November

1991

## Who's Who? Continued

More on the incredible new Gold Card

Adding a UHF modulator to a T/S 1000

Info. on the Savings and Load Scandal

Plus Much, Much More!!!

LIST  
5 Peri Lane  
Valley Stream, NY 11581



TO:

DON LAMBERT JAN/92  
1301 KIBINGER PL  
AUBURN IN 46706-3010

FIRST CLASS MAIL  
Dated Meeting Notice  
November 10, 1991

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## LIST OFFICERS

\*\*\*\*\*  
President Harvey Rait  
Treasurer Robert Malloy  
Cor. Secretary John Pazmino  
LISTing Editor Alvin Brandon  
Librarian Tom Skapinski  
\*\*\*\*\*

Please send inquiries to:

LIST  
Mr. Harvey Rait  
5 Peri Lane  
Valley Stream, NY 11581

Please send submissions to:

Alvin Brandon  
367 South 5th Street Apt. 1E  
Brooklyn, NY 11211  
\*\*\*\*\*

N.Y.T.S.E.

N.Y.T.S.E. meets the Monday after

the LIST meeting at:

Miss Kim's Restaurant  
Park Avenue South  
(between 21st and 22nd Streets)  
Meetings start at 7:30 PM  
\*\*\*\*\*

Coming Events

\*\*\*\*\*

November 10, 1991 at 2:00 PM:

LIST Meeting

November 11, 1991 at 7:30 PM:

N.Y.T.S.E Meeting  
\*\*\*\*\*

Meeting Minutes

October 13, 1991  
\*\*\*\*\*

Harvey called the meeting to order  
at 2:30 PM.

The first thing we discussed was  
FOG. Fred asked about the costs and  
the benefits involved with becoming a  
FOG member.

John P. also mentioned that more and  
more of the BBS's are networked cross  
country. We discussed FIDO-NET and  
Packet Radio being used to link  
computers cross country while avoiding  
high long distance charges.

Also discussed was speeding the Westridge  
2050 Modem to greater than 300 Baud. Any  
information on how this can be done, please  
drop a line to LIST in care of Harvey Rait.

On the QL front, we discussed starting a  
separate QL group that would meet a couple  
of hours before the LIST meeting. That group  
would join QUANTA. That group would have  
its own newsletter and have access to the  
QUANTA library. The Boston QL group is  
now a subgroup of QUANTA.

## CLASSIFIEDS

\*\*\*\*\*

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Contact Micro Format, Inc.

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\*\*\*\*\*

<<<< W A N T E D >>>>

Back issues of QL World Magazine. Call or  
write to Bob Gilder

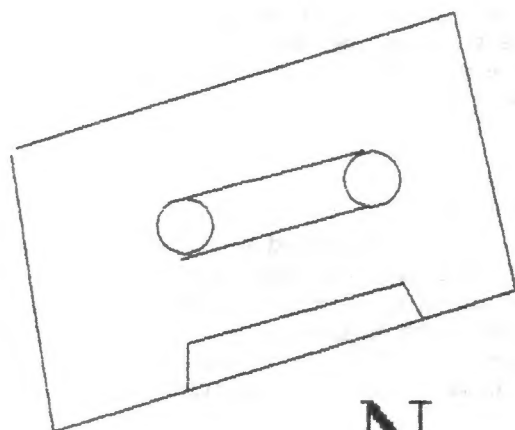
69 Jefferson Place

Massapequa, NY 11758

516 541-2271.

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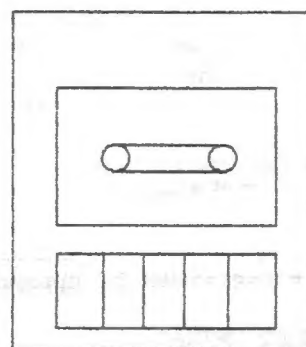


D

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LOAD



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Contact LIST for more information.

LIST

c/o Harvey Rait

5 Peri Lane

Valley Stream, NY 11581

# QL CORNER

The following information contains all of the NEW commands for the Miracle Systems GOLD CARD, which has been extracted from the Gold Card Supplement of the Trump Card manual.

After power up the QL will appear to do 2 resets. During the first reset the GOLD CARD reads its code from the QL ROMS. Their contents are then copied over to the GOLD CARD RAM and patched. A second reset is then run that checks all the memory. To auto-boot from disk make sure that the disk is in FLP1 before the F1/F2 prompt appears.

## Disk Densities

The GOLD CARD can interface with Double Density (DD), High Density (HD) and Extra high Density (ED) disk drives. DD is the standard for the QL as supported by the Trump Card. To use the higher densities you must use the appropriate disk and the appropriate drive. The GOLD CARD will automatically detect which type of disk it is working with when reading and writing but works on a trial and error basis for determining the density of a disk when FORMATING. It is possible in exceptional circumstances that a disk could be formatted to a density higher than its normal density. To prevent this the maximum density that a disk can be FORMATED to can be set by the command:

FLP\_DENSITY "type"

Where "type" is as follows:

Diskette	Capacity	"Type"
Single Sided, Double Density	360 Kilobytes	"S"
Double Sided, Double Density	720 Kilobytes	"D"
Double Sided, High Density	1.44 Megabytes	"H"
Double Sided, Extra high Density	3.2 Megabytes	"E"

This table refers to 3.5", 80 track disks. The 5.25", 40 track, double density PC compatible disks are of "D" type.

The disk type set by FLP\_DENSITY remains in force until the next FLP\_DENSITY. It can be temporarily overridden by appending "\*type" to the name in the FORMAT command, e.g.

FORMAT "MIRACLE\*H"

would format the disk to a size other up to HD and give the disk the name "MIRACLE" regardless of the previous FLP\_DENSITY. Note that the name excluding the "\*type" can be up to 10 characters and that after a RES\_128 or RES\_SIZE 128 instruction only DD is available.

## Sub-directories

Hard sub-directories can be created using MAKE\_DIR, e.g.

MAKE\_DIR "FLP2\_letters"

After executing this command, the command

DIR FLP2\_

would show amongst its output file "letters ->" signifying that "letters" is a sub-directory. Further, copying a file to "FLP2\_letters\_bankmanager" will create a new file in the "letters" sub-directory.

DIR FLP2\_letters\_

would show one file "letters\_bankmanager".

To remove a sub-directory first delete its contents and then delete the directory itself. COPY and WCOPY deal only with files at the specified directory level. Sub-directories can also be applied to RAM disks. Please note that sub-directories should not be put on disks that are to be used with a TRUMP CARD system.

## Disk drive step rate

The step rate is set automatically by the GOLD CARD to be 3ms for an 80 track drive and 6ms for a 40 track. This can be overridden using FLP\_STEP. If only one parameter is given then this step rate is applied to FLP1 only, e.g.

FLP\_STEP 12

will set the step rate on FLP1 to 12ms. When 2 parameters are given then first is the drive number and the second the step rate, e.g.

FLP\_STEP 3.6

will set FLP3 to step at 6ms. Repeated seek errors cause the step rate to be slowed.

## RAM size

There are a small number of programs that do not work if there is too much memory in the QL. The memory seen by QDOS can be reduced using the RES\_SIZE command taking a single parameter denoting the number of kilobytes required, e.g.

RES\_SIZE 896

will cause the QL to reset to give a capacity of 896K making the system look as though there is a TRUMP CARD 768K installed. A single reset sequence occurs after this command. The command:

RES\_SIZE 128

is identical in operation to RES\_128. Resetting to this size has two other effects: only Double Density disks can be used and PROT\_DATE 1 is executed.

## Battery Backed Clock

When the GOLD CARD is first installed, the clock will need setting. This is done simply by using the SDATE command in the normal way, e.g.

SDATE 1991,7,25,15,30,0

will set the clock to July 1991, 15:30:00. The time will be maintained by the GOLD CARD after power is switched off. Removal of the GOLD CARD from the QL can cause the time to be lost. The commands SDATE and ADATE and the corresponding QDOS calls affect the GOLD CARD clock. The GOLD CARD clock can be protected by using PROT\_DATE, e.g.

PROT\_DATE 1

In this protected state all operations involving the clock only use the QL's clock.

On power up or reset (except a RES\_SIZE 128) the equivalent of

PROT\_DATE 0

is executed which allows the GOLD CARD clock to be modified. The QL clock is set to the GOLD CARD time at reset. The battery in the GOLD CARD should keep the clock going for about 5 years.

## QL HARD DISK Extensions (for QL HARD DISK users only)

All of the QL HARD DISK extensions contained in the "WIN\_EXT" file have been included in the GOLD CARD ROM and there is no need to load this file when the GOLD CARD is fitted. Instead, just type TK2\_EXT. Also there is no WIN\_EXT command.

Bob Gilder

## The ZX81/TS1000 Column by Fred Stern

One of the biggest complaints about the ZX81/TS1000 computer is the poor video quality received on VHF televisions used as monitors.

The two ways to solve this problem is:

- 1 - Modify the computer to allow it to be used with a monitor.
- 2 - Change the internal video modulator from VHF to UHF.

During the summer, I decided to try one of the above solutions to improve television reception. I investigated solution 1 and decided not to try it. First of all, I did not have a monitor, and second, if Sir Clive intended that the ZX81 be used with a monitor, he would have added a monitor output.

SYNC magazine had an excellent article on converting to UHF video. Originally, the ZX81 broadcasted in UHF for U.K. televisions. U.S. models were changed to VHF to satisfy F.C.C. regulations.

Thanks to Anthony Farrell (a fellow Sinclairist from Australia) I was able to aquire a UHF modulator at an affordable price. Following the instructions in the SYNC article, I installed the new modulator in my TS1000. The results were well worth the effort.

Gone were the herring bone and hash mark interference usually witnessed on VHF reception. The picture was crystal clear and rock steady on my Sony 9 inch B&W portable, tuned to UHF channel 33.

Since the procedure, I have tracked down a source for the modulator. If you are interested in converting your ZX81/TS1000, send me a note at LIST. If enough inquiries are received, I will make a bulk purchase of the modulators. The cost would be \$10.00 plus postage.

If you want to receive the modulator sooner, they are still available from Computer Continuum as advertised in the article.



# Installing a UHF Modulator *Randall Glidden*

For those of you with a standard ZX81/Timex-Sinclair 1000, this article may not be of much interest since, without any peripheral devices, your computer will transmit a clear video display with most TVs. However, if you have added an external keyboard, a motherboard, or even just a 16K RAM pack you will probably have encountered those annoying little bands of interference that just will not go away, regardless of how much you reposition your computer or fiddle with the fine tuning. The problem arises from the square waves generated by all digital circuitry which are picked up very nicely at 63 MHz (you guessed it—channel 3). Shielding all components will do much to alleviate the situation, but the hard-core computer hack with motherboards, modems, and meters of wire-wrap may find it difficult or undesirable to put all that circuitry under aluminum. Also, shielding does not usually eliminate the problem entirely, as those with a ZX81 and 16K RAM alone will probably attest—the video quality is much better without the RAM pack plugged in.

A solution that is relatively inexpensive, easy to do, and (best of all) permanent, regardless of how much extra hardware you have, is to convert your ZX/TS to transmit over UHF channel 33 (146 MHz). At that frequency those nasty little digital spectral (Fourier) components go virtually undetected. It is interesting to note that European ZX81's come with a UHF-33 modulator instead of the VHF 2,3 found in the American model.

So if you are willing to invest about \$15, a half hour of your time, and do not mind invading the inner sanctum of your computer (which will void the warranty of a factory assembled unit), then read on.

If you consult chapter 25 of *ZX81 Basic Programming*, you will find a nice photograph of the ZX81 hardware layout. (I assume there is a similar photo in the T/S 1000 programming book also.) The VHF video modulator is the small silver box in the upper left corner of the circuit board. (If you have a sharp eye, you will notice that the modulator in the photograph is a UHF modulator.) In this project all we need to do is replace this with a UHF channel 33 modulator. These are currently available from: Computer Continuum, 301 16th Ave., San Francisco, CA. 94118 (cost \$15 ppd. with instructions, as of this writing). You may be able to find one for less at some discount electronics houses if you want to shop around a bit.

Once you get your channel 33 modulator get a 15-25 watt soldering iron, some rosin-core solder, a small Phillips-head screwdriver, and a pair of needle-nose pliers. Follow the steps below for interference free video!

- 1) Assemble all your materials in a clean, well-lit work area.
- 2) Remove the circuit board from your computer by removing the five Phillips-head screws from the back cover. Three of these screws are located under the little rubber pads at the corners. Note that the

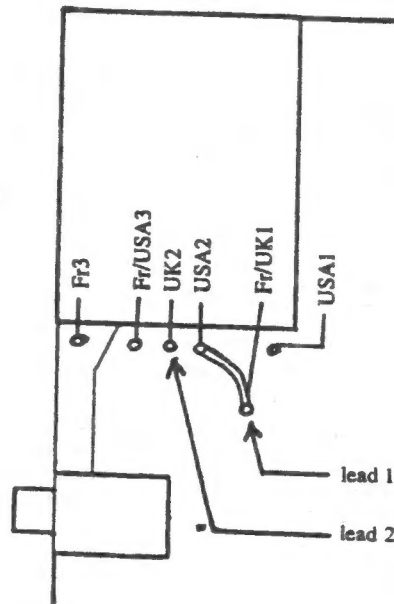
two screws at the front corners are shorter than the back three screws. Inside you will see two short screws holding the circuit board to the front cover. Remove these, carefully noting their exact location on the board (important when you reassemble). *Carefully* disconnect the keyboard leads by gently pulling them free. Be careful not to tear or kink these leads or you will have big problems later on.

3) Locate the modulator (see the photo in chapter 25) and disconnect the three leads from its lower end by heating the solder pads with your iron and pulling them free with the needle-nose pliers. Be careful not to pull too hard or you may damage the printed circuit traces on the board.

4) At this point the modulator is being held down by two solder lugs located on its underside at each end. Heat these from beneath the board and pull them free one end at a time. You may have to work it free a little bit at a time, heating one end then the other.

5) With the modulator removed you should be able to see printed markings on the circuit board, as noted in Figure 1 (e.g., Fr 3, UK 2, etc.). Note that there are only two leads on the UHF modulator, one protruding from a little insulator (Figure 2). Push the solder lugs of the UHF modulator into the holes one at a time while heating. You

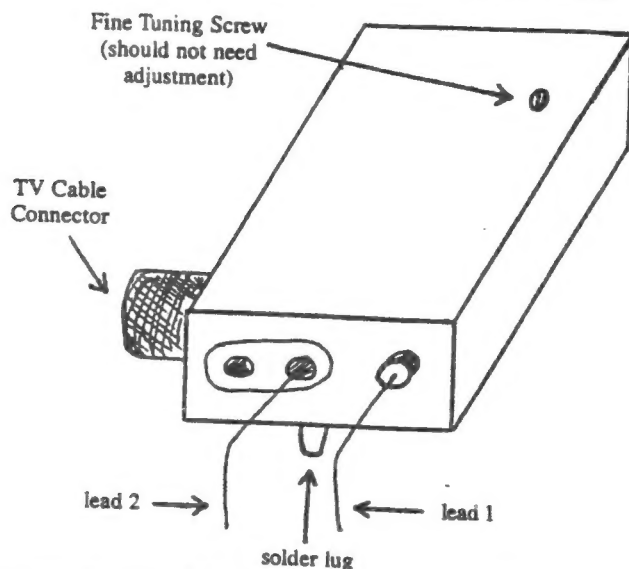
Figure 1. Circuit Board Diagram.



will notice that the jack for the TV cable is closer to the EAR jack than on the other modulator. Add extra solder to the lugs if needed, since these are the ground connections and should be secure.

6) Consulting the figures and the circuit board markings (which I hope you read before you soldered the modulator down over them), solder the lead from the insulator (lead 1) into the hole at the end of the line marked "Fr/UK 1". This is the 5V power source. Be sure to pull the lead through the board and trim any excess wire to prevent shorts.

Figure 2. UHF Video Modulator.



7) Solder lead 2 into the hole marked "UK 2" (Figure 1). This is the video signal from pin 16 of the Sinclair Computer Logic IC.

8) Make sure there are no shorts between the leads you have soldered and any of the printed circuit traces on the board (check both sides). Also be sure your solder joints are good at the leads and the solder lugs.

9) Now it is a good idea to see if the thing works before putting it back in its case. Plug the TV cable into the modulator, reposition the two leads from the antenna switch box to the UHF leads of your TV, turn to UHF channel 33, and plug in your power supply. You should see a nice, clear blank screen with the "K" cursor in the lower left corner, even without the keyboard hooked up. If you do not, fine tune your UHF tuner on the TV, recheck your modulator connections (is lead 2 in the right hole?), look for shorts, etc.

10) Before you can put your computer back together you have to cut a new hole in the side of the front cover to accommodate the different position of the TV cable jack. Use the mold marks already on the case (used with the European ZX's) as a guide. A piece of stiff wire wrapped around the tip of your soldering iron can be used to heat-cut a hole very easily.

11) Plug the keyboard tails into the sockets on the circuit board and carefully reposition it onto the mounting posts on the front cover. The keyboard tails should loop gently under the board without any creases or kinks. Replace the two short screws which hold the board to the mounting posts.

12) Replace the back cover, with the two short screws at the front corners and the three longer screws at the back. Put the rubber feet back, using a little rubber cement if they are not sticky any more.

Congratulations! You now have a video display that is crystal-clear and readable, even when loaded to the hilt with extra peripheral hardware. I hope this article will have also demonstrated to the Sinclair user the relative ease with which many hardware modifications can be performed, thus greatly enhancing the versatility and enjoyment of the ZX81 or T/S 1000.

## Technical Tidbits Parts 1 & 2 are still available!

**Contact LIST in care of  
Harvey Rait for more  
information.**

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Unused or unwanted  
Sinclair computer  
hardware and software  
for our club. If you  
have any equipment  
you would like to part  
with, contact Harvey  
Rait.

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LISTing editor, Alvin  
Brandon at:  
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# Who's Who???

## (Part II)

This is the continuation of last months list of people involved in providing software and hardware support for all Sinclair and Timex/Sinclair computers. Give them a call! Let them know we are still around!

AERCO

Box 18093

Austin, TX 78760

(512)451-5874

T/S 1000 & 2068 Printer and Disk interfaces. CP/M Emulators.

Beaver Computer Products

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Winnipeg, Manitoba

Canada R2K 1V5

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Westerville, OH 43081

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Mesa, AZ 85214

T/S 1000 & 2068 Software

Herb Bowers Sr.

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Chesapeake, VA 23323

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2068 Software

Byte Back

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Leesville, SC 29070

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T/S 1000 & 2068 Software and hardware.

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St. Paul, MN 55119

(612) 735-3637 (evenings)

2068 Communications S/W

Paul Hunter

1630 Forest Hills Drive

Okemos, MI 48864

T/S 1000 Software & Hardware.

More coming next month!!!  
Stay tuned.

# SCREEN DISPLAY STORAGE AND MEMORY RELOCATE

BY DENNIS JURRIES

The following is a routine that will work on the TS 2068, and with address modifications, on the TS 1000. You can save screen displays, or use it to relocate a program in memory from one address to another. The program as it is written here, will allow three screen displays to be stored and recalled in approximately 0.04 seconds.

The screen display on the TS 2068 is located at address 16384 and takes up 6912 bytes of memory.

```
Machine code loader and MC
5 CLEAR 44609
10 FOR i=44610 TO 44629
15 READ x: POKE i,x: NEXT i
20 DATA 33,0,64,17,86,174,
24,6,33,86,174,17,0,64,1,0,
27,237,176,201
```

## **RUN and DELETE 5,20**

If you wish to allow space for more, the two 174's in line 20 will have to be reduced by 27 for each extra screen display, and the addresses in lines 5 and 10 will have to be reduced by 6912 for each extra screen. Be sure to check to see if you have enough memory to add the extra screens.

Load in or design the first screen display. Type RAND USR 44610 and press ENTER to store the first screen. POKE 44615,201 for the second screen display set up.

Load in or design your second screen display. Press RAND USR 44610 and ENTER to store the

second screen. To set up for the third screen display, type POKE 44616,228.

LOAD in or design your third screen display. Press RAND USR 44610 and ENTER to store the third screen. The USR addresses will change by 6912 for each screen display over the three set up here.

To recover your screen displays:  
**POKE 44620,174 for screen #1**

**POKE 44620,201 for screen #2**

**POKE 44620,228 for screen #3**  
**and press RAND USR 44618.**

For any extra screens, change address 44618 to 6912 less than 44618 for each extra screen, and the same for address 44620. The value of the number poked into address 44620 changes by 27 for each screen, and will also do so for any extra screen displays.

To save your screen displays, press SAVE "name"CODE 44610,20756. If more than three screen displays are to be saved, then change the first number after the CODE to the new starting address, and add 6912 times the number of screens in excess of the three to the second number.

## **OP-CODES for Machine Code**

```
44610 LD HL,16384
44613 LD DE,44630
44616 JR 6
44618 LD HL,44630
44621 LD DE,16384
44624 LD BE,6912
44627 LDIR
44629 RET
```

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# A letter from the Editor....



The newsletter is late, as you may have already noticed. During this past month, I have endured many setbacks, some good, some bad, that have made getting the newsletter ready in time almost impossible. BUT, one thing that I did want to do was print the newsletter in the new format. I hope you like it. I have spent many hours trying to get the new look down, and the final form is still evolving. I have tried to make the text easy to read, but I am still having problems getting the text as sharp as I would like. I hope you will bear with me. As for content, we desperately need all of you to send in program listings, reviews, articles, etc. so that we can pass on this information to our other readers. If nobody sends me articles, we will soon use up our article bank. On a final note, I would like to thank some of the people who have helped me in getting this newsletter out. I would like to thank Frank Cabrera. Although he is not a LIST member, he was kind enough to help me design the general layout of the newsletter. I would also like to thank Tom Skapinski for his patience. Thanks go out to Fred Stern and Bob Gilder for their great articles. And now I am off to get this newsletter to the printers.....

**Alvin Brandon, Editor**

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# **LISTing Policy**

**Annual Dues.....\$16.00**

**One 'sample' copy sent upon receipt of a large SASE.**

**Copies provided on exchange basis with other bona fide user groups.**

**LISTing is published monthly by LIST (Long Island Sinclair Timex) Group, a non profit user group.**

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**The normal membership year is February through January at a cost of \$16.00. By keeping as many members as possible on that basis, we keep our costs and chances of error down. If you wish to begin your subscription later in the year, please sign up for the rest of this year and all of next.**

**We will accept partial years or different subscription runs, on a limited basis (particularly from members outside the U.S.). BUT, please remember that in addition to possible rate increases, your 'account' must be handled 'by hand' and errors may occur.**

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